CLAIMS

What is claimed is:

1. A method comprising:

stacking an upper die having an upper top surface and upper first, second, third, and fourth edges on top of a lower die having a lower top surface and lower first, second, third, and fourth edges such that the upper first edge is displaced from the lower first edge by a first distance, the upper first and third edges being opposite to each other, the lower first and third edges being opposite to each other, the upper top surface facing toward the lower top surface; and

attaching the upper die to the lower die with an adhesive layer between the upper and lower dies.

2. The method of claim 1 further comprising:

attaching upper and lower conductors to upper and lower bond pads of the upper and lower dies at the upper and lower first edges, respectively, such that the upper and lower conductors are separated by a conductor distance.

3. The method of claim 1 further comprising:

attaching upper and lower conductors to upper and lower bond pads of the first and second dies at the upper third and the lower first edges, respectively.

4. The method of claim 1 wherein stacking the upper die comprises:

stacking the upper die on top of the second die such that the upper second edge is displaced from the lower second edge by a second distance.

5. The method of claim 4 further comprising:

attaching upper and lower conductors to upper and lower bond pads of the upper and lower dies at the upper and lower second edges, respectively, such that the upper and lower conductors are separated by a conductor distance.

6. The method of claim 1 further comprising:

attaching the lower die to a substrate by a second adhesive layer deposited between the lower die and the substrate.

7. The method of claim 1 further comprising:
depositing an upper redistribution layer to place bond pads on the upper die.

8. The method of claim 7 further comprising:
depositing a lower redistribution layer to place bond pads on the lower die.

9. The method of claim 1 wherein stacking the upper die comprises:
stacking the upper die on top of the lower die, the upper and lower die having same or substantially similar sizes.

10. The method of claim 1 wherein attaching comprises:
attaching the upper die to the lower die by the first adhesive layer made of a non-conductive or conductive material.

11. A method comprising:
stacking a plurality of dies on top of one another in a staggering configuration such that an upper die top surface in a pair of adjacent dies faces downward or upward and is displaced by a first distance with respect to a lower die in the pair; and
attaching the adjacent dies by an adhesive layer between the adjacent dies.

12. The method of claim 11 further comprising:
attaching conductors to bond pads of the adjacent dies such that the conductors are separated by a conductor distance.

13. The method of claim 11 wherein stacking comprises:
stacking the plurality of dies in a first stair-case configuration in a first dimension.

14. The method of claim 13 wherein stacking further comprises:
stacking the plurality of dies in a second stair-case configuration in a second dimension.

15. The method of claim 11 wherein stacking comprises:
stacking the plurality of dies in a first alternate staggering configuration in a first dimension.

16. The method of claim 15 wherein stacking further comprises:
stacking the plurality of dies in a second staggering configuration in a second dimension.

17. The method of claim 11 further comprising:
depositing a redistribution layer to place bond pads on at least one of the plurality of the dies.

18. The method of claim 11 wherein stacking comprises:
stacking the plurality of dies having same or substantially similar sizes.

19. The method of claim 11 wherein stacking comprises:
stacking the plurality of dies on top of a substrate; and
attaching a bottom die of the plurality of dies to the substrate by an adhesive.

20. The method of claim 11 wherein attaching comprises:
attaching the adjacent dies by the adhesive layer made of a non-conductive or conductive material.

21. A die assembly comprising:
a plurality of dies stacked on top of one another in a staggering configuration such that an upper die top surface in a pair of adjacent dies faces downward or upward and is displaced by a first distance with respect to a lower die in the pair; and
an adhesive layer between the adjacent dies to attach the adjacent dies.

22. The die assembly of claim 21 further comprising:
conductors attached to bond pads of the adjacent dies such that the conductors are separated by a conductor distance.

23. The die assembly of claim 21 wherein the plurality of dies are stacked in a first stair-case configuration in a first dimension.

24. The die assembly of claim 23 wherein the plurality of dies are stacked in a second stair-case configuration in a second dimension.

25. The die assembly of claim 21 wherein the plurality of dies are stacked in a first alternate staggering configuration in a first dimension.

26. The die assembly of claim 25 wherein the plurality of dies are stacked in a second staggering configuration in a second dimension.

27. The die assembly of claim 21 further comprising:

a redistribution layer to place bond pads on at least one of the plurality of the dies.

28. The die assembly of claim 21 wherein the plurality of dies having same or substantially similar sizes.

29. The die assembly of claim 21 further comprising:

a substrate attached to a bottom die of the plurality of dies by an adhesive.

30. The die assembly of claim 21 wherein the adhesive layer is made of a non-conductive or conductive material.